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A S C E N T

AND

BAROMETRICAL MEASUREMENT

OF

MOUNT SEWARD.

BY

VERPLANCK COLVIN.

PRINTED IN ADVANCE OF THE REPORT.

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FROM THE
TWENTY-FOURTH ANNUAL REPORT
ON THE
NEW YORK STATE MUSEUM OF NATURAL HISTORY,
FOR THE YEAR 1870.

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BAROMETRICAL MEASUREMENT
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MOUNT SEWARD, FROM LAKE INCAPAHCHO OR LONG LAKE

Wood. Parson, J. L. Lith.

ASCENT OF MT. SEWARD AND ITS BAROMETRICAL MEASUREMENT.

SAMUEL B. WOOLWORTH, LL.D.,

Secretary of the Board of Regents of the State of New York:

DEAR SIR.—I herewith respectfully submit to you the report of my recent explorations in the Adirondack wilderness of Northern New York.

The main object of the expedition was the barometric measurement of Mt. Seward, a lofty peak, of the ascent of which there is no record, and the height of which remained in doubt. Prof. Emmons, while engaged in the survey of the second geological district of the State, estimated the elevation at 5,100 feet above tide; but as he neither ascended the mountain, nor attempted its measurement by triangulation, there seems to have been no basis for such a conjecture.

Mt. Seward—called by the Mohawk Indians *Ou-kor-lah*, or the “big-eye”—is nearly upon the most southern boundary of the county of Franklin, in Great tract No. 1, township twenty-seven of Macomb's purchase; north latitude about $44^{\circ} 10'$, and longitude, west from Greenwich, $74^{\circ} 0'$. It is, with the numerous lesser peaks connected with it, the most westwardly of the Adirondack, hyperite group. East from it is Wallface mountain of the Indian Pass, and more distant, Mt. Tahawus or Marey, the summit of the range and of the State, raising its gray peak 5,467 feet above the sea. South of Mt. Seward are the Preston ponds and their outlet, Cold river, which empties into the Raquette just below Long lake. The Raquette river might, perhaps, be called its western boundary; its northern limit, but for Moose mountain and Ampersand pond, would be the well-known Saranae lakes.*

In this expedition my route was from Albany, via Saratoga up the Hudson, and to Indian lake in Hamilton county; thence crossing

* In the accompanying plate the numerous lofty peaks forming the back-ground of the picture, taken together constitute what is locally known as Mt. Seward. Some of the highest points are here shown, but the summit, lying back, nearly eastward of them, is probably not visible from any point on Long lake. The ascent was made from the right, up and along the range of minor peaks shown.

Inca-pah-cho is the old Indian name for Long lake, and has heretofore been little used. It implies lake-of-basswoods, or linden-water.

the woods to the beautiful and deservedly famous Blue Mountain lakes. Here guide and canoe awaited me, and, after tarrying to make the ascent of Blue mountain (Mt. Emmons), I passed over the lakes, and, by way of Marion river, reached Lake Raquette. It may be here remarked that the whole distance, from Blue mountain to the foot of Mt. Seward, might almost be made without leaving the canoe or boat; lakes and rivers, for some fifty or sixty miles, forming the tortuous highway.

At Lake Raquette I found the guide whom I had selected to accompany me in the ascent of the mountain,—an elderly man, muscular, energetic, born and bred a hunter and skilled in wood-craft. A short day's journey, by Forked lake and Raquette river, brought myself and guide to the settlement on Long lake. Here I consulted Mitchell Sabbattis, the famous Indian, and others acquainted with the region near Mt. Seward, and was confirmed in a plan which I had formed of attempting the ascent at the south side, from the direction of the Preston ponds. Sabbattis affirmed that Mt. Seward had never been ascended, and certainly never measured, or he would have known of it. One of the lower peaks had been ascended and called Mt. Seward.*

The morning of October 13th, 1870, was bright and pleasant, and found us struggling to push our boat up the rapids of Cold river; a beautiful crystalline stream—haunt of the trout—which, fed by the springs on the mountain slopes, rushes sparkling down to pour its icy flood into Raquette river, a short distance below Long lake. From the foot of that lake we had seen the outlying ridges of Mt. Seward; now the forest which walled in the river concealed it from view. At length our progress became so slow, and the rapids so frequent, that drawing the boat ashore, we hid it, with my rifle and other luggage, in a thick copse.

Having lunched, we started to follow the north bank of the river, toward the Preston ponds, taking a sled-road leading to certain deserted lumber shanties, distant seven or eight miles, where we expected to camp that night.

We were armed each with a hunting knife and revolver,—the guide

* Since writing the above I have been informed that Prof. A. Guyot had previously made the ascent of Mt. Seward, and, in answer to an inquiry, he has kindly given me some notes of his expedition. The starting point was Adirondack village, and the time occupied two days. Mr. Ernest Sandoz, his nephew, undertook the ascent and measurement, but had the misfortune to cut his foot, which made the ascent the more difficult, after which he suffered an additional disheartening misfortune, in breaking his barometer before reaching the top of the mountain. My observations, therefore, seem to be the first ever taken upon the summit of Mt. Seward.

carrying in a pack three days' provisions, rubber and woolen blankets, and in his hand a hatchet. I was encumbered only with my barometer and satchel containing sketch-book and maps.

Our course along the river bank was a slow but constant ascent, as was proved by the numberless rapids and several falls which at short distances made the hurrying water whiten to foam. Step by step the stream descended its channel, and now our approach to the true Adirondacks became obvious. In the bed of the river were numerous huge boulders of labradorite rock or feldspar—sometimes called hypersthene granite—of the familiar bluish, ashen hue, which gives the beds of these mountain streams so peculiar an appearance. Before nightfall we had reached the terminus of the sled road, not far westward from the Preston ponds, but returned to make our camp in one of the old, long deserted lumber shanties. During the night sparks from the camp-fire caught in the roof; fortunately the flames were extinguished before they were beyond control, or the instruments on which the success of the expedition depended, might have been destroyed.

October 14th.—The camp was about thirty feet above Cold river, the banks of the stream being very steep. When we awoke, clouds and fog enveloped everything, and a drizzling rain was falling. Before 9 A. M. the fog lifted, the rain ceased, and finally, the clouds broke a little, though the mountains were still obscured. There was no wind. This was the first station where observations were made, four readings being taken.

Hour.	Barometer.	Att'd. Ther.	Det'd. Ther.
8.30 A. M.	28.150 inch.	52° 5 Fah.	53° 0 Fah.
8.42 "	28.175 "	53° 0 "	54° 5 "
8.45 "	28.200 "	53° 0 "	54° 5 "
8.50 "	28.225 "	54° 5 "	54° 0 "

I had previously determined the compass direction of the mountain, and notwithstanding the dubious state of the weather, set out immediately to commence the ascent. At the south, or south-east, Mts. Henderson and Santanoni were, alone of all the peaks, visible; and even their summits were hidden in the clouds. Taking a north-easterly course, we struck directly into the forest toward a small mountain, whence we might be able better to select the way. Our

progress was slow, for, as there was no trail, my guide took the precaution to blaze the path, by chopping upon the trees every fifty or a hundred feet, and continued so to do, with great labor, throughout the day.

At length, reaching the height we had in view, we were disappointed to find it overlooked by another crest, more lofty than the one which we had climbed, and separated from us by a slight depression. Believing that from its top we would be able to discover Mt. Seward, we addressed ourselves to the task and laboriously climbed it, only to discover two loftier peaks towering opposite, beyond and above which the clouds, as they drifted, at times opened to view a misty summit higher than all. It was evident that we were already upon the slopes of the mountain. A narrow valley was between us and the opposite peaks; descending into it, we found the forest carpeted with deep, wet, sphagnous moss. Again ascending, the slope became all but precipitous; yet, by means of small trees, mainly silver-birches, we drew ourselves up.

Here the guide called my attention to a tree with its bark and wood torn by the claws of some large beast. In another place a bear had bitten a fallen tree to the core, and elsewhere left marks of his teeth on the wood. The tracks of deer and other wild animals were also observed, some of which were very recent; the deep moss was like snow and retained the impressions.

With much labor we at length climbed a ridge and saw no more peaks above us; the valley we had left was far down, and the surrounding country, wherever the eye could reach, spangled with lakes. Now the forest began to show that we had attained an altitude where vegetable life recoiled; the trees, principally Canada balsam, spruce and white birch, were dwarfed and stunted, being barely fifteen or twenty feet high. The abundant, deep moss was a sponge of icy water, so cold as to make our feet ache as we stood. In clambering upon hands and knees, as we were often compelled to do, we were wetted to the skin, waist high. Our breath was visible in the cold air, which chilled us through our wet clothing; yet the day, though windy, was now bright and clear.

After a hasty repast, we hurried along the ridge to gain the highest point upon it, being anxious to accomplish our work and descend part-way the same afternoon; not wishing to camp in that wet, cold region, where sleep, if possible, would be extremely hazardous.

About 3 p. m. we seemed to have gained the highest point on the

ridge, though the thick, miniature forest, obscured the view, telling by its presence—before I had glanced at the instruments—that we were still far beneath the height ascribed to the mountain. Barometrical observations were here taken; cloud fragments drifting through the forest, the while.

Hour.	Barometer.	Attd. Ther.	Detd. Ther.
3.26 P. M.	25.900 inch.	44° Fah.	40° Fah.
3.30 "	25.940 "	42° "	38° "
3.35 "	25.950 "	40° "	37° "
3.40 "	25.950 "	39°.5 "	37° "

Hardly had the above been noted before my guide, who had wandered off, returned to announce a still higher point in view. The barometer was returned to its case, and we hurried on. The balsam trees continued to dwindle in height, until we stood upon an open crest. The world seemed all below us; but northward, half a mile away, a lofty summit reared itself, grizzly with dead and withered balsams, struggling to keep their hold upon the rock that here and there looked out gloomily; it was Mt. Seward. Between us and it was an abyss through which clouds floated.

It was a grand, though disheartening spectacle; so near, yet seemingly inaccessible. The afternoon was nearly spent; it was evident that we would now be compelled to camp amid the clouds. However, evening and twilight continue upon the mountains long after the valleys are dark with shadows, and we determined to improve the time by attempting the passage of the gorge. At length, as the clouds parted, we noticed a narrow ridge, or "horse-back," far below, which crossed the deep valley, and on which it seemed that one might pass over.

Starting to descend, we discovered snow in small quantity, the remains of a last winter's drift, lying exposed to the air, discolored and icy. Its preservation thus must be exceptional. Descending amidst precipitous rocks, we reached the "horse-back," and, by hastening, were able at nightfall to cross the deep valley. With the last rays of the sun upon us, we formed a camp just below the true summit of the mountain, on the edge of the impenetrable thicket of dwarf balsams.

There was no spring, but water was easily procured by pulling up moss; the space thus made being soon filled with excellent cold water which, when settled, was sufficiently clear for use. The night came down dark and chill, and a strong westerly wind made the camp-fire burn fiercely. The rubber blanket, spread upon a thick bed of balsam boughs, kept me from the wet moss, and some of the small trees, piled bodily to windward, tempered the blast; the rear of the camp being a large rock.

At about eight o'clock in the evening the sky was lightened by that brilliant aurora borealis which excited such attention throughout the northern hemisphere by its wonderful iridescence, and brought the inhabitants of beleaguered Paris upon their ramparts, to gaze with awe at a manifestation by many deemed of dire import. It shot up from the north-west, and, passing over to the east, formed a broad crimson belt overhead; while the whole dome of the heavens was lit with silvery glory, which flashed and swayed in seeming concord with the eddies of a gale then whirling round the mountain. With every wave and brightening of the aurora a sighing, whispering sound was heard, like the rustling of great folds of silk, which my guide assured me was the "noise of the northern light." At the north-western horizon pencils of blue darted up toward the zenith, but I was in doubt whether the color was not that of the sky, seen through intervals in the auroral cloud. The rays seemed to center a few degrees south of the zenith. The display lasted long into the night. The guide, who was without coat or blanket, kept himself warm by chopping fire-wood, and we hailed the day with pleasure.

October 15th.—We had not far to ascend from our camp, before we reached a dense growth of dwarf balsam trees, which form a barrier to the summit. They were at first about seven or eight feet high; with much labor we pushed or chopped our way through them, their branches being stiff and numberless and intricately locked. At 8 A. M. we walked upon the trees, which had dwindled to great shrubs, flattened to the ground, with long, spreading, lateral branches, and stood at last upon the summit.

The view hence was magnificent, yet differing from other of the loftier Adirondaeks, in that no clearings were discernible; wilderness everywhere; lake on lake, river on river, mountain on mountain, numberless. Northward was Whiteface mountain; then shone the lower Saranac lake, half hidden by Moose mountain, while below glit-

tered Ampersand * pond. Looking eastward the mass of the Adirondack was seen, a sea of peaks; nearer, the serrate crest of Mt. McIntyre reared itself; but nearer still was Wallface mountain, viewed not from the east, but from the west; the reverse slopes descending steeply into a dark but broad valley, which seemed even deeper than the Adirondack or Indian Pass upon the other side of the mountain, yet, though gloomy with precipices, lacking the tremendous cliffs which give so much interest to the more famous gorge. A similar locality, somewhere in this neighborhood, was called by the Indians *Ouluska*. As Indian terminology is now generally preferred to modern names, I suggest this for the pass discovered.

The day was clear but cold, and a strongly westerly wind blowing. The hypsometric observations were as follows:

Hour.	Barometer.	Attd. Ther.	Detd. Ther.
9.10 A. M.	25.600 inch.	47° 0 Fah.	45° 0 Fah.
9.12 "	25.600 "	46° 0 "	44° 5 "
9.15 "	25.625 "	44° 0 "	43° 0 "
9.17 "	25.625 "	43° 5 "	42° 0 "
9.20 "	25.640 "	43° 0 "	42° 0 "
9.30 "	25.600 "	42° 0 "	42° 0 "

The height of the mountain had indeed been over-estimated. Of the 5,100 feet attributed to it, it lacked 638 feet; the elevation as measured being 4,462 feet above tide-level, or the sea.

The substance of the mountain was found to be labradorite rock; fragments broken from the summit exhibited crystals of opalescent feldspar, with beautiful play of colors; magnetic iron also occurred in small fragments scattered through the rock. It was late in the season for botanical observations, but the flora appeared similar to that of the neighboring summits which I have visited.

Of the provisions carried with us, there now remained only sufficient for one light meal. Since leaving the boat, it had taken us two days and a portion of a third to make the ascent, and we were now in the depths of the wilderness.

About 10 A. M. we commenced the descent, taking a new course west of south, and, under powerful incentives, by dint of rapid and

* "Ampersand." I believe this to be incorrect etymology, and do not think that it is derived from the *and-per-se-and* termination of old alphabets; but attribute the name to the bright, yellow sandy shores and islands, which make it truly *Amber-sand lake*.

hazardous traveling, at nightfall reached the boat, where our extra provisions and baggage were found undisturbed.

During the descent, near the foot of the mountain, we observed some scattering giant white-pines, some of which seemed to be between 150 and 200 feet in height, with diameter in proportion. The rest of the forest was dwarfed by their presence. On my return to Albany, I passed out of the wilderness by the Fulton chain of lakes, into Lewis county, and thence via Utica.

The barometer used was a mercurial cistern instrument, deer-skin bottom and brass scale. Before starting upon the expedition it was compared with the standard at the Dudley Observatory, and fortunately, for in returning it was broken. The deductions from the observations hereinbefore given have been calculated by Prof. Hough of the Dudley Observatory, which was the station for corrections. I inclose a note giving the results :

“ DUDLEY OBSERVATORY, }
Dec. 15th, 1870. }

“ DEAR SIR.—In accordance with your request, I have computed the height of your stations on Mt. Seward, from the barometrical observations you furnished me.

“ The observations were reduced to thirty-two degrees Fahrenheit, and compared directly with the records given by our automatic registering instruments.

“ The following is the data used :

DATE, OCTOBER, 1870.	Stations.	MT. SEWARD.			DUDLEY OBSERVATORY.	
		No. of readings.	Barometer 32 deg.	Temp. of air.	Barometer 32 deg.	Temp. of air.
14th, 8.45 A. M.	No. 1	4	28.144	54°	29.769	55
14th, 3.30 P. M.	“ 2	4	25.905	38°	29.779	55
15th, 9.15 A. M.	“ 3	6	25.580	43°	29.980	50

“ As your barometer had previously been compared with our standard, and found to give essentially the same readings, no correction for scale has been necessary.

“ At the time of the observations at the three stations, the variation of pressure was as follows :

“Station No. 1, barometer rising 0.004 inches hourly.

“ 2, “ rising 0.010 “ “

“ 3, “ falling 0.002 “ “

“As the longitude of Mt. Seward does not differ more than one minute of time from that of the Dudley Observatory, the observations may be directly compared with our own, without any sensible error.

“The following results have been deduced:

STATION.		Height above the Dudley Observ'y.	Height above tide-water.
Number 1	1,544 feet.	1,714 feet.
“ 2	3,773 “	3,943 “
“ 3	4,292 “	4,462 “

“The height of the barometer at the Dudley Observatory is assumed to be 170 feet above tide in the Hudson river.

Very truly yours,

G. W. HOUGH,

Director.”

“VERPLANCK COLVIN, Esq.”

Before closing this report, I desire to call your attention to a subject of much importance. The Adirondack wilderness contains the springs which are the sources of our principal rivers, and the feeders of the canals. Each summer the water supply for these rivers and canals is lessened, and commerce has suffered. The United States government has been called upon, and has expended vast sums in the improvement of the navigation of the Hudson; yet the secret origin of the difficulty seems not to have been reached.

The immediate cause has been the chopping and burning off of vast tracts of forest in the wilderness, which have hitherto sheltered from the sun's heat and evaporation the deep and lingering snows, the brooks and rivulets, and the thick, soaking, sphagnous moss which, at times knee-deep, half water and half plant, forms hanging lakes upon the mountain sides; throwing out constantly a chilly atmosphere, which condenses to clouds the warm vapor of the winds, and still reacting, resolves them into rain.

It is impossible for those who have not visited this region to realize the abundance, luxuriance and depth which these peaty mosses—the true sources of our rivers—attain under the shade of

those dark, northern, evergreen forests. The term "hanging-lake" will not be deemed inappropriate, in consideration of the fact that in the wet season a large mass of this moss, when compressed by the hands, becomes but a small handful, the rest of its bulk being altogether water; often many inches deep, it covers the rocks and boulders on the mountain sides, and every foot-print made has soon a shallow pool of icy water in it.

With the destruction of the forests, these mosses dry, wither and disappear; with them vanishes the cold, condensing atmosphere which forms the clouds. Now the winter snows that accumulate on the mountains, unprotected from the sun, melt suddenly and rush down laden with disaster. For lumber, once so plentiful, we must at no distant day become tributary to other States or the Canadas. The land, deprived of all that gave it value, reverts to the State for unpaid taxes.

The remedy for this is the creation of an ADIRONDACK PARK or *timber preserve*, under charge of a forest warden and deputies. The "burning off" of mountains should be visited with suitable penalties; the cutting of pines under ten inches or one foot in diameter should be prohibited. The officers of the law might be supported by a per capita tax, upon sportsmen, artists and tourists visiting the region; a tax which they would willingly pay if the game should be protected from unlawful slaughter, and the grand primeval forest be saved from ruthless desolation.

The interests of commerce and navigation demand that these forests should be preserved; and for posterity should be set aside, this Adirondack region, as a park for New York, as is the Yosemite for California and the Pacific States.

VERPLANCK COLVIN.

ALBANY, *Dec. 16th*, 1870.

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